AAJ ACCOUNTING ANALYSIS JOURNAL

Accounting Analysis Journal

https://journal.unnes.ac.id/journals/index.php/aaj

Unmasking Fraudulent Financial Statements in Banks: The Interplay of Greenwashing, Political Connection, and Board Independence

Riyan Harbi Valdiansyah[1], **Dian Widiyati**[2]✉

[1]*Department of Accounting, Faculty of Economics and Business, Universitas Budi Luhur, Jakarta, Indonesia*

[2]*Department of Accounting, Faculty of Economics and Business, Universitas Pamulang, South Tangerang, Indonesia*

ARTICLE INFO

Article History:
Received January 26, 2026
Revised March 3, 2026
Accepted August 12, 2026
Published September 8, 2026

Keywords:
Fraud; Greenwashing; Political Connections; Banking Governance; Independent Commissioners

ABSTRACT

Purpose: The study investigates the relationship between greenwashing, political connections, and fraudulent financial statements in the Indonesian banking sector, with independent commissioners serving as a moderating variable.

Methods/Study design/Approach: The study uses panel data from 434 bank-year observations of Indonesian commercial banks during 2016–2022. Fraud is measured using the F-Score and Beneish M-Score models, while the hypotheses are tested using panel regression and moderation analysis.

Result/Findings: The results show that greenwashing is significantly associated with fraudulent financial reporting, generally negatively across models. Political connections also significantly affect fraudulent financial statement, although the direction varies by measurement approach. Independent commissioners moderate the relationship between greenwashing and fraud, but their role in the political connections-fraud relationship is limited. Analysis comparing pre-crisis and COVID-19 periods shows that economic stress influences these relationships. Findings have practical implications for banking governance by emphasizing effective board oversight, stronger monitoring by independent commissioners, and improved transparency in sustainability and political-related disclosures to reducing fraud.

Novelty/Originality/Value: The study contributes to the literature by Employing both F-Score and M-Score models and comparing pre-crisis and COVID-19 periods, the study shows that economic stress and ESG scrutiny alter governance effectiveness and incentives for fraudulent reporting in emerging-market banks.

INTRODUCTION

Financial statements are fundamental instruments owned by every financial institution, functioning as documentation of transactions that occur within the scope of the financial institutions (Bamhdi, 2024; Calandra et al., 2024). This report aims to provide a comprehensive overview of the company's performance to stakeholders, both internal and external, to support the strategic decision-making process. Along with the strengthening of economic growth and increasingly competitive business dynamics, companies are required to adapt sustainably and find business opportunities that can increase their competitiveness (De-Almeida Barbosa Franco et al., 2024; Kumar & Ratten, 2024; Tolossa et al., 2024).

Based on the 2024 Association of Certified Fraud Examiner (ACFE) study report, it is explained that the estimated total loss for all types of fraud is 5% of the total cases (1,921 cases) originating from 138

[1]✉ *E-mail: dosen02421@unpam.ac.id*
_Address: Jln. Surya Kencana No. 1, Pamulang Barat, Kec. Pamulang, Kota Tangerang Selatan, Banten 15417, Indonesia

countries or amounting to more than $3.1 billion (Labuschagne & Fourie, 2025). The banking and financial services industry was the industry that suffered the most losses, with an average loss per case of $120,000 from 305 cases. The results of the survey from ACFE Global present data on fraud cases that occurred in the banking industry, namely 366 cases, 386, 351, and 305. Furthermore, financial statement fraud schemes and corruption schemes in the banking sector have the greatest speed in fraudulent practices, resulting in faster financial losses to victims (Gabrielli et al., 2024; Gilbert, 2024; Odufisan et al., 2025). In Indonesia is that while studies have examined greenwashing as contractual fraud and its legal implications, as well as the prevalence of political connections in corporate governance, there is limited empirical evidence on how independent commissioners can moderate the combined effect of greenwashing and political ties on fraud. Most research focuses separately on greenwashing's legal risks (Pop et al., 2026; Poiriazi et al., 2025; Forliano et al., 2025) or political connections' influence (Bleibtreu et al., 2022; Faccio, 2006; Liu et al., 2023; Poiriazi et al., 2025), but not on the moderating governance role of independent commissioners in reducing fraud.

The banking sector serves as a distinctive setting for investigating fraudulent financial reporting due to its systemic importance and the high magnitude of fraud-related losses. In Indonesia, this risk is compounded by a unique institutional environment where banks face mandatory sustainability disclosures under POJK 51/2017, creating intense legitimacy pressures. Simultaneously, these institutions often operate within highly regulated political landscapes where boards are frequently embedded with political actors. Consequently, greenwashing and political connections do not merely represent isolated governance variables; they function as intertwined contemporary fraudulent financial statement drivers.

This study seeks to discuss is how greenwashing influence fraud, providing a governance safeguard that strengthens transparency and accountability in Indonesia's corporate environment. The rise of ESG (Environmental, Social, Governance) expectations has pressured Indonesian companies, especially in banking and finance, to appear sustainable. However, in the absence of strict auditing, many adopt greenwashing to mislead stakeholders. By crafting a green image, firms can gain reputational capital and investor trust without manipulating financials (Poiriazi et al., 2025). Research examining the relationship between greenwashing and financial statement fraud has been widely conducted. However, the results remain inconsistent. Previous research explains that greenwashing has a positive impact on fraud, particularly in the context of companies involved in ESG fraud. These companies exploit loopholes in sustainability verification, using greenwashing to mislead investors and regulators, and demonstrating how companies manipulate ESG criteria to appear compliant (Pop et al., 2026; Poiriazi et al., 2025; Forliano et al., 2025). However, other studies show that greenwashing can also have a negative impact on fraud, meaning that efforts to curb greenwashing through digital transformation, transparency, and accountability to reduce opportunities for fraudulent behaviour in ESG reporting. By limiting information asymmetry and strengthening verification, greenwashing practices are harder to sustain, thereby lowering fraudulent financial statements (Xu & Li, 2026).

In addition to the issue of greenwashing, political connections have also been identified as a factor that can influence fraud. Political connections refer to the relationships or connections that a person, organization, or company has with political figures or parties (Hardiningsih et al., 2024; Liu et al., 2024). These connections can be personal, professional, or financial relationships that allow them to influence or be influenced by political decisions. In a business context, having political connections can often provide benefits, such as ease of obtaining permits, access to government projects, or protection from competition. However, political connections can also carry risks, especially if there is a change in government or if the connections are perceived corrupt by the public or law enforcement. The previous research has been discussed about the connection between political connections to fraudulent financial statement with inconsistent result (Bleibtreu et al., 2022; Faccio, 2006; Liu et al., 2023; Poiriazi et al., 2025).

Independent commissioners play a vital role in moderating the relationship between greenwashing, political connections, and fraud because they strengthen oversight and accountability. Their independence allows them to critically evaluate sustainability claims, reducing the opportunity for management to misuse greenwashing as a cover for fraudulent practices. At the same time, they act as a counterbalance to political influence, limiting rent-seeking behaviour and corruption that often accompany strong political ties. An independent commissioner is a member of the board of commissioners who has no affiliation relationship with major shareholders, directors, or other members of the board of commissioners, so that he or she can carry out his duties independently and objectively (Sari & Setiawan, 2024; Susanto et al., 2024). Independent commissioners are responsible for overseeing management policies, providing objective views, and protecting the interests of minority shareholders. They are often expected to avoid conflicts of interest and ensure that the company is managed in accordance with the principles of good corporate governance.

Although prior studies have examined greenwashing, political connections, and financial reporting quality separately, limited research has investigated how these factors jointly influence fraudulent financial statements in banks. This gap is important because banks face legitimacy pressure to appear environmentally responsible while operating in highly regulated political and institutional environments, which may increase incentives for impression management and concealment through fraudulent financial statement. The findings remain inconclusive: greenwashing and political ties may either increase fraudulent financial statement or improve transparency and scrutiny. These mixed results indicate the need for a clearer perspective on governance. This study addresses that gap by examining whether independent commissioners act as a monitoring mechanism moderating the relationship between greenwashing, political connections, and fraudulent financial statements.

The novelty of this study lies in its multi-dimensional and contextual approach to analysing fraud in Indonesia. First, by employing both the F-Score and M-Score models, the research captures different dimensions of fraudulent financial statement, offering a more comprehensive and nuanced measurement than studies that rely on a single fraud detection model. Second, the study introduces a temporal analysis by distinguishing between the pre-crisis and COVID-19 crisis periods, revealing how economic stress influences fraudulent behaviour an angle rarely explored in Indonesian corporate governance research.

This study makes four contributions to the literature that consist of: (1) it extends Fraud Theory by demonstrating that greenwashing and political connections can be understood as contemporary fraudulent financial statement drivers within financial reporting, particularly in banking institutions where legitimacy pressures and political influence are highly salient. While prior fraud studies predominantly focus on internal incentives such as earnings pressure or managerial opportunism, this study shows that ESG-related disclosure practices and political embeddedness also shape fraudulent reporting behavior; (2) this study contributes to banking governance literature by examining whether independent commissioners function as an effective governance mechanism capable of mitigating fraud associated with greenwashing and political ties. In doing so, the study provides evidence regarding the practical limits of governance monitoring in emerging-market banks; (3) methodologically, this study strengthens fraud measurement by employing both the F-Score and M-Score models to capture different dimensions of fraudulent financial statement. This dual-measure approach improves robustness compared with studies relying on a single fraud proxy; (4) by distinguishing between the pre-crisis and COVID-19 crisis periods, this study contributes a temporal perspective showing how external economic pressure alters the relationship between greenwashing, political connections, and fraudulent reporting.

Within this framework, the research objective is to examine whether independent commissioners can moderate the relationship between greenwashing and political connections on fraud in Indonesian companies. The rationale is that greenwashing and political ties often create opportunities and rationalizations for fraud, while independent commissioners mandated under Indonesia's corporate governance regulations to be expected to strengthen oversight, reduce information asymmetry, and limit the misuse of sustainability narratives and political influence. Thus, the study aims to fill a gap in the literature by empirically testing the moderating role of independent commissioners in mitigating fraudulent financial statements, contextualized through Fraud Theory (Vousinas, 2019) and Indonesia's unique governance environment.

This study employs Fraud Theory (Vousinas, 2019) as a theoretical basis, a theory which emphasises that fraud arises from a combination of pressure, opportunity, and rationalisation. This theoretical framework provides a conceptual foundation for comprehending the evolution of manipulative practices, including greenwashing, into more sophisticated forms of fraud within the domain of financial reporting and sustainability. This simplified framework presents a layered theoretical hierarchy to explain how fraud emerges and how it can be moderated. At the base is Fraud Theory, which identifies the core drivers of fraud (pressure, opportunity, and rationalization). Above it, Agency Theory (Jensen & Meckling, 1976) highlights the conflict between managers and shareholders, where greenwashing and political connections may be used to mislead principals. Stakeholder Theory (Freeman, 1984) expands the scope of accountability, showing how deceptive ESG practices and political favouritism can harm broader stakeholder interests. At the top, Legitimacy Theory (Deegan et al., 2002) explains how companies use greenwashing and political ties to maintain social acceptance, especially under ESG pressure. Overarching all layers (Figure 1), Independent Commissioners serve as moderators, reducing fraudulent financial statement by limiting managerial discretion, enforcing transparency, and challenging misleading sustainability claims and political influence. This structure illustrates how governance mechanisms can intervene across multiple theoretical dimensions to mitigate fraud.

ACFE classifies fraud in companies or institutions into 3 groups (ACFE, 2019). Group 1 is fraud against assets or asset misappropriation, namely misuse of company assets or institutions, whether it is stolen or used for personal purposes without permission from the company. Group 2 is fraud in financial statements or fraudulent statements, namely all kinds of actions that make financial statements not as they should be or do not represent reality. Group 3 is corruption which is divided into 2 categorize, namely conflict of interest and Bribery or acceptance of bribes from anyone. The factors that cause fraud are in accordance with the development of fraud theory that has been known since 1953 to 2019, these are The Fraud Triangle Model (Cressey, 1953), The Fraud Diamond Model (Wolfe & Hermanson, 2004), Crowe's Fraud Pentagon Model (Howard, 2011), The Fraud Heptagon Model (Yusof et al., 2015), and The Fraud Hexagon (Vousinas, 2019).

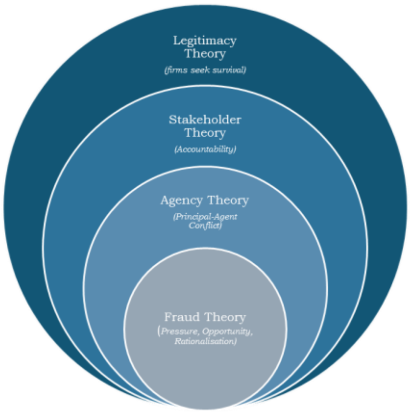

Figure 1. Theoretical Framework
Source: Adapted from Deegan et al. (2002), Freeman (1984), Jensen & Meckling (1976), Vousinas (2019)

The variables in each fraud theory are used to detect fraudulent behaviour and are constantly undergoing development because the mode and behaviour of fraud are increasingly complex.

Greenwashing is a practice in which companies portray themselves as more environmentally friendly than they are through marketing campaigns and misleading communications (Bhagat, 2024; Marrucci et al., 2025). This practice is often used to attract the attention of investors, customers, and regulators who are increasingly concerned with sustainability and environmental responsibility issues. Theoretically, Legitimacy theory proposes that organizations continually seek to ensure their operations and image conform to societal norms and expectations to maintain legitimacy, which underpins social acceptance and the ability to operate (Yıldız, 2026). Greenwashing serves as a strategic tool within this framework. It allows firms to symbolically align with environmental norms by misleading stakeholders about their actual sustainability performance, thereby preserving or restoring organizational legitimacy when faced with environmental scrutiny or criticism (Zhang et al., 2022; Yıldız, 2026). This misrepresentation can mask underlying unsustainable or even fraudulent behaviours that contravene legitimate environmental or social standards. Within the framework of fraud theory, particularly the Hexagon Fraud Model, greenwashing can be understood as a distinct type of fraudulent financial statements. In this context, companies exaggerate or embellish their environmental credentials to project stronger sustainability performance, thereby shaping perceptions among investors, consumers, and regulators (Indriaty & Thomas, 2023).

Financial Institutions that engage in greenwashing face strong pressure to project an environmentally responsible image despite operational realities that contradict such claims (Santos et al., 2024; Wang et al., 2025). This pressure can drive management to manipulate financial statements. For instance, by downplaying environmental costs or overstating revenues from "green" banking products. Over time, greenwashing fosters a culture that prioritizes appearance over integrity (Free et al., 2024; Lin et al., 2025), encouraging unethical practices such as falsifying financial data. As a result, the likelihood of fraudulent financial reporting increases, undermining public trust and reinforcing deceptive corporate behavior.

H_1: Greenwashing has influence positively to fraudulent financial statement

Political connections refer to the close relationship or involvement between individuals or companies with political actors, such as government officials, political parties, or other influential figures (Akcigit et al., 2023; Innayah & Pratama, 2022). In a business context, these relationships can provide certain advantages, such as ease of access to resources, protection from strict regulations, or influence in the decision-making process at the government level. Political connections and fraudulent financial statements are intertwined because political ties often create opportunities for fraud by reducing regulatory scrutiny and providing protection from enforcement. From a Fraud Theory perspective, political connections negatively impact fraud because they strengthen the opportunity element of the fraud triangle. Firms with strong political ties often enjoy reduced regulatory scrutiny, preferential treatment, or protection from sanctions, which lowers the perceived risk of detection. This environment creates fertile ground for managers to manipulate financial statements, as oversight mechanisms are weakened. In addition, political influence can provide a rationalization allowing companies may justify fraudulent reporting as necessary to maintain their privileged status or meet expectations tied to political alliances. Thus, political connections distort the balance of governance and accountability, amplifying the likelihood of fraudulent behaviour.

Companies with political connections may feel safer or immune to legal sanctions, because they have the support or protection of those in power (Hardiningsih et al., 2024; Liu et al., 2024). This can create incentives to commit unethical actions, including manipulating financial statements or fraudulent financial statements. They may feel that the risk of being caught or punished is lower compared to companies that have no political connections. In addition, political connections can also allow companies to access resources more easily, which can be misused to cover up unethical practices (Bleibtreu et al., 2022; Florackis et al., 2023). For example, companies can obtain loans on lighter terms or avoid strict scrutiny from tax authorities, all of which can facilitate the fraudulent financial statement.

In this situation, management may feel compelled to report better financial performance than it is to maintain or increase their political support. Thus, political connections can increase the tendency of companies to make fraudulent financial statements because there is a perception that they have protection or convenience that other companies do not have. This hypothesis underscores that political involvement not only affects business and regulatory dynamics but can also negatively impact the integrity and transparency of a company's financial statements (Hardiningsih et al., 2024; Liu et al., 2024; Bleibtreu et al., 2022; Florackis et al., 2023).

H_2: Political connections have influence positively to fraudulent financial statement

Basically, when greenwashing and fraudulent financial statements are examined together, the theoretical framework shows how independent commissioners act as a crucial moderator. Fraud Theory explains that greenwashing provides rationalization for misreporting, while fraudulent financial statement fulfils pressure and opportunity elements. Legitimacy Theory adds that firms use greenwashing alongside manipulated reporting to maintain social acceptance under ESG pressures. Within this hierarchy, independent commissioners intervene by demanding transparency, reducing managerial discretion, and challenging misleading sustainability claims, thereby weakening the link between greenwashing and fraudulent financial statements.

Greenwashing, which is a company's practice that gives the impression of caring about the environment with the aim of improving the company's image without taking real action for environmental sustainability, can be one of the factors that encourage the manipulation of financial statements (Poiriazi et al., 2025). Companies involved in greenwashing may feel the need to cover up information or create a better financial picture than it is, thereby increasing the risk of fraudulent financial statements. Independent commissioners, who are expected to have high objectivity and integrity, serve as neutral supervisors within the board of directors (Harymawan et al., 2020; Martí-Ballester, 2023). They can reduce the chance of fraudulent financial statements by ensuring that the financial statements reflect the actual condition of the company and that there is no distortion of information caused by greenwashing efforts. This shows that strong governance through the role of independent commissioners can serve as an important control mechanism in preventing unethical financial practices that may arise because of greenwashing.

H_3: Independent Commissioner weaken the influence of greenwashing to fraudulent financial statement

Political connections often intensify the risk of fraudulent financial statements because they create opportunities for manipulation by reducing regulatory oversight and offering protection from sanctions. Fraud Theory frames this as an opportunity element, while Agency Theory shows how managers exploit political ties to pursue personal gain at the expense of shareholders. Stakeholder Theory highlights the broader harm, as favouritism undermines fairness and erodes trust among investors, regulators, and society. In this layered framework, independent commissioners act as moderators, enforcing transparency and accountability, thereby weakening the link between political connections and fraudulent financial statements

Companies with political connections tend to have easier access to state resources, such as government contracts, subsidies, or favourable regulations (Bleibtreu et al., 2022; Liu et al., 2024; Rudyanto et al., 2023). However, these connections can also create conflicts of interest and the urge to manipulate financial statements. Companies may feel more protected from regulatory sanctions or scrutiny due to their relationship with authorities, increasing the risk of fraud in financial reporting. Independent commissioners are expected to have a role in maintaining the integrity of the company and overseeing management to operate in accordance with the principles of good governance (Chen & Keefe, 2020; Harymawan et al., 2020). They do not have a direct affiliation with the company, so they can serve as a more objective and neutral supervisor. The presence of an independent commissioner can strengthen internal oversight mechanisms and reduce the chance of fraud, especially in companies with strong political connections (Figure 2).

H_4: Independent Commissioner weaken the influence of political connections to fraudulent financial statement

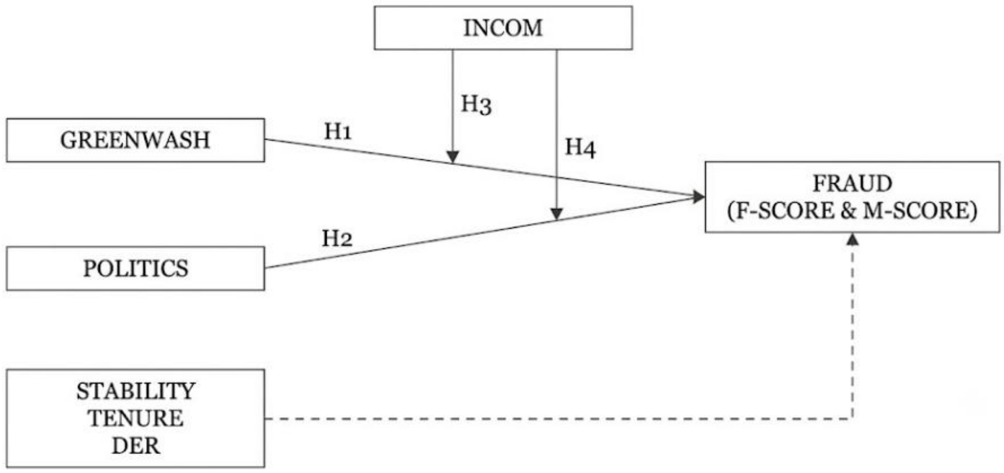

Figure 2. Research Model
Source: Primary data processed (2026)

METHOD

This study uses panel data from commercial banking institutions registered with the Financial Services Authority of Indonesia (OJK) during the 2016–2022 period. The initial population consisted of 504 bank-year observations, comprising 72 commercial banks observed over seven years (72 × 7 = 504). The sample was refined using purposive sampling (Table 1). First, 7 bank-year observations were excluded because the institutions underwent mergers during the observation period, which may affect comparability of financial performance and reporting consistency. Second, 63 bank-year observations were excluded due to incomplete annual financial reports during the study period. After applying these criteria, the final sample consisted of 434 bank-year observations. For sub-period analysis, the observations were divided into 248 bank-year observations for the pre-crisis period (2016–2019) and 186 bank-year observations for the crisis period (2020–2022).

Table 1. Sample selection process

Selection criteria	All sample	Before crisis (2016-2019)	During crisis (2020-2022)
Commercial banking institutions are registered with the Financial Services Authority of Indonesia.	504	288	216
Commercial banking institutions that underwent mergers during the period from 2016 to 2022.	-7	-4	-3
Commercial banking institutions that did not submit complete financial reports consecutively from 2016 to 2022.	-63	-36	-27
Total Observations	434	248	186

Source: Data processed by author (2026)

This research employs a causal approach, utilizing a moderation regression analysis model to examine the relationship between greenwashing and financial fraud in the banking sector. Researchers incorporated greenwashing and political connections as independent variables in this study, recognizing the prominence of issues related to greenwashing and political connections in Indonesia during the 2016-2022 period, particularly regarding financial fraud in the banking sector. During this period, there was a significant push towards the implementation of Environmental, Social, and Governance (ESG) principles in the financial sector. However, some banking institutions employed greenwashing to create a misleading impression of sustainability, thereby concealing their opaque financial practices. Despite the existence of regulatory frameworks, such as the Financial Services Authority Regulation No. 51/POJK.03/2017, which governs ESG implementation, the enforcement of these regulations remains deficient. This regulatory gap enables financial institutions to exploit their political connections, circumventing scrutiny and potentially facilitating fraudulent activities. Furthermore, financial institutions with robust political connections leverage these networks to secure preferential treatment, including audit waivers and access to government-sponsored initiatives. This phenomenon engenders opportunities for financial fraud (Fama & French, 1998; Lin et al., 2025). The governance mechanism is employed as a moderator under the assumption that the ongoing pandemic has led to

Table 2. Variable Definitions and Measurements

Variable	Definitions
FSCORE (Hung et al., 2017)	F-Score evaluates various financial metrics, such as receivables, inventory, cash sales and earnings, to detect anomalies that may indicate fraudulent activities. A higher F-Score suggests a higher likelihood of fraud, while a lower score indicates a lower risk. ***FSCORE** = RSSTaccrual + Financial Performance* ***RSSTaccrual** = (ΔWorking Capital +Δ Non-Current Operational Accrual +Δ Financial Accrual) / Average Total Assets* ***Financial Performance** = Dreceivables + Dinventories + Dcash sales + D earnings*
MSCORE (Sylwestrzak & Słomkowska, 2025)	The M-Score model, also known as the Beneish M-Score, is a statistical tool designed to detect earnings manipulation and fraudulent financial statement. M-Score greater than -2.22 suggests a higher likelihood of earnings manipulation, while a score below this threshold indicates a lower risk. ***MSCORE** = -4.84 + (0.92 × DSRI) + (0.528 × GMI) + (0.404 × AQI) + (0.892 × SGI) + (0.115 × DEPI) + (-0.172 × SGAI) + (4.679 × TATA) + (-0.327 × LVGI)*
GREENWASH (Netto et al., 2020)	Greenwashing refers to the practice of overstating or misrepresenting a company's sustainability efforts by highlighting Environmental, Social, and Governance (ESG) initiatives in ways that do not align with its actual operational impact. Measuring greenwashing involves assessing the extent to which a company exaggerates or misrepresents its environmental, social, and governance (ESG) practices concerning its marketing expenditure. ***GREENWASH** = ESG expenditure / Marketing expenditure.*
POLITICS (Vousinas, 2019)	The concept of political connection is determined based on four criteria: (1) the banks' involvement in government projects during the research period; (2) the banks' status as a government-owned entity; (3) the presence of board members, either directors or commissioners, who concurrently hold positions as politicians affiliated with political parties or government officials; and (4) the ownership or shareholding of banks by individuals who are politicians affiliated with political parties or government officials. In this study, content analysis is operationalized using a dummy variable method, assigning a score of 1 if a criterion is met, and 0 otherwise. The scores for each criterion were then aggregated to derive the overall score for each bank. ***POLITICS** = Total Scores / Total Politics Criterion*
INCOM (Ozcelik, 2020)	The measurement of independent commissioners typically involves evaluating their effectiveness in corporate governance and their ability to enhance transparency and accountability. This metric assesses the percentage of independent commissioners on the board relative to the total number of board members. A higher proportion is generally associated with stronger governance. ***INCOM** = Total independent commissioners on the board / total number of board members.*
STABILITY (Achmad et al., 2022)	Bank financial stability in relation to asset changes refers to how fluctuations in a bank's assets impact its ability to maintain operations, meet obligations, and withstand economic shocks. Asset changes can include variations in loan portfolios, investments, or liquid assets, and they are critical indicators of a bank's financial health. ***STABILITY** = D Total Assets / Previous Total Assets*
TENURE (Patterson et al., 2019)	Audit tenure measurement refers to evaluating the duration of the relationship between an auditor (or audit firm) and a client. It is a critical factor in assessing audit quality, independence, and potential risks associated with prolonged auditor-client relationships. The most straightforward method is counting the number of consecutive years an auditor or audit firm has provided services to a client. ***TENURE** = Σ Audit engagement year*
DER (Raboshuk et al., 2023)	The Debt-to-Equity Ratio (DER) is a financial metric used to measure a bank's financial leverage. It indicates the proportion of a bank's total debt to its shareholders' equity, providing insights into how the bank finances its operations and manages its capital structure. ***DER** = Total debt / Shareholders' equity*

Source: Adapted from Achmad et al. (2022), Hung et al. (2017), Netto et al. (2020), Ozcelik (2020), Patterson et al. (2019), Raboshuk et al. (2023), Sylwestrzak & Słomkowska (2025), Vousinas (2019)

an increased reliance on greenwashing and political connections as a survival strategy, thereby further entwining these practices with financial fraud. The appointment of independent commissioners is anticipated to enhance governance and transparency in addressing these concerns. Table 2 presents variable definitions and measurements.

Financial stability, auditor tenure, and leverage are crucial in the research on greenwashing, political connections, and financial fraud. Financial stability influences a company's likelihood of fraudulent reporting. Financial stability positively affects fraudulent financial reporting, with unstable companies being more prone to greenwashing or fraud to maintain investor confidence (Achmad et al., 2022). Furthermore, Auditor tenure significantly aids in detecting and preventing fraud. A previous study suggests that longer auditor tenure improves audit quality and reduces undetected fraudulent financial statement. The study indicates the importance of auditor tenure in greenwashing and fraud research. Leverage is vital for understanding the impact of financial risk and fraudulent behaviour (Patterson et al., 2019). High leverage may pressure companies to engage in greenwashing or fraud to meet debt and maintain confidence. These factors are essential control variables as they significantly influence a company's behaviour regarding greenwashing and fraud. Financial stability affects fraud propensity, auditor tenure impacts detection, and leverage influences risk and performance, all of which contribute to or mitigate fraudulent practices and greenwashing.

RESULTS AND DISCUSSIONS

A consideration of the descriptive statistics in Table 3 explains that the average level of fraud in general, as described in the F-Score measurement, in the sample of this study is still within the low-risk limit (0.4541 < 1) with a median of 0.1891, although some samples show a high fraudulent financial statement of up to 65.1810. As demonstrated in the M-Score perspective, the M-Score is indicative of fraud that is more likely to involve earnings manipulation. This perspective also exhibits a similar trend, with the average sample indicating a low risk of earnings manipulation (-2.3729 < -2.22) with a median of -2.7470.

The study's findings are noteworthy in highlighting that Indonesian bank tend to engage in greenwashing, with an average score of 17.2348. This suggests a correlation between high greenwashing values and the presence of environmental costs within marketing expenditures (Dempere et al., 2024). The practice of greenwashing is regarded as deceptive due to the allocation of substantial resources by companies or organizations to promote themselves as environmentally friendly entities while simultaneously undertaking actions that mitigate their environmental impact minimally (Mishra et al., 2023; Schneider-Maunoury, 2023).

Table 3. Statistics Descriptive

	Mean	Median	Maximum	Minimum	Std. Dev.	N
FSCORE	0.4541	0.1891	65.1810	-3.6573	3.8046	434
MSCORE	-2.3729	-2.7470	77.8643	-29.3918	4.4736	434
GREENWASH	17.2348	0.8579	502.5919	0.0002	56.2845	434
POLITICS	0.3306	0.2500	0.7500	0.0000	0.2152	434
INCOM	0.4225	0.4167	1.0000	0.0000	0.1642	434
STABILITY	0.3472	0.0835	13.2831	-0.8897	1.5011	434
TENURE	2.8894	2.0000	7.0000	1.0000	1.7792	434
DER	4.8595	4.7099	16.0786	0.1600	2.6314	434

Source: Processed research data (2026)

Moreover, financial fraud, including banking fraud, greenwashing, and corporate corruption is frequently facilitated or intensified by political intervention. The influence of political connections on fraud and corruption is particularly pronounced in the domains of corporate governance and government oversight (Florackis et al., 2023; Liu et al., 2023). In this study, the average value of political connections is relatively high, with a mean value greater than the sample median (0.3306 > 0.2500). This indicates that, on average, banks in Indonesia during the study period exhibited one to two categories of actions that are indicative of political connections among the board of directors or commissioners.

The final point that merits emphasis in this section pertains to the governance mechanism delineated by the independent commissioner. In this study, the mean value of the independent commissioner is regarded as rather elevated (0.4225). This observation underscores the extent to which the supervisory board's independence remains a salient concern in the context of banking in Indonesia. Independent commissioners, as (Kassem, 2022) notes, contribute to effective corporate governance by providing objective oversight and reducing the risk of fraud. Their presence on the board has been shown to enhance corporate reputation and increase the probability of fraud detection. Specifically, the proportion of independent commissioners on the board has been found to encourage management in the banking industry to enhance corporate governance compliance (Zulfikar et al., 2020).

This study does not perform a normality test, as normality is not a prerequisite for the Ordinary Least Squares (OLS) estimator to be considered the Best Linear Unbiased Estimator (BLUE) under the Gauss–Markov theorem. The BLUE property requires assumptions of linearity, exogeneity, homoskedasticity, and no perfect multicollinearity, but not normality of the error terms (Wooldridge, 2020).

Furthermore, as illustrated in Table 4, this study employs a quantitative approach to examine the relationship between independent variables, providing a statistical foundation for interpretation while also addressing potential issues such as multicollinearity. A low correlation coefficient (<0.3) signifies those al-

Table 4. Correlation Coefficients

	GREENWASH	POLITICS	INCOM	STABILITY	TENURE	DER
GREENWASH	1.0000					
POLITICS	0.0119	1.0000				
INCOM	0.0654	-0.1176	1.0000			
STABILITY	-0.0201	0.0581	-0.0690	1.0000		
TENURE	0.0804	0.0641	-0.1196	-0.0657	1.0000	
DER	0.2462	0.2107	-0.0514	0.0811	-0.0129	1.0000

Source: Processed research data (2026)

terations in one variable are not significantly associated with changes in another variable. This finding suggests that independent variables possess limited predictive capability with respect to each other, and they may not exhibit strong correlation in terms of their economic or statistical behavior. This characteristic is advantageous in terms of preventing multicollinearity symptoms (Van Aert & Goos, 2023).

To complete the classical assumption tests, researchers conduct heteroscedasticity testing to strengthen the reliability of statistical inference (Table 5). Identifying heteroscedasticity enables the application of corrective techniques such as robust standard errors or alternative estimators, which help preserve the accuracy of conclusions and uphold the credibility of financial and economic research. In this study, the conventional threshold for significance is set at a p-value of 0.05 (5%). The heteroscedasticity test in this study, conducted with residual absolute (resabs) using the Glejser method, evaluates whether error variance in the regression model is constant. Based on Table 5, both models show no significant heteroscedasticity since all p-values exceed the 0.05 threshold. Only TENURE in the F-SCORE model ($p = 0.0609$) approaches significance but remains above the cut-off. Therefore, the regression results are considered reliable without requiring major corrections.

Table 5. Heteroscedasticity Test

Variable	C	t-Stat.	Prob.	C	t-Stat.	Prob.
C	-2.0528	-1.1106	0.3092	3.7474	1.7154	0.1371
GREENWASH	-0.0015	-1.4697	0.1920	0.0045	2.3013	0.6100
POLITICS	0.0725	0.1561	0.8811	-0.4952	-1.6115	0.1582
INCOM	0.3625	0.6675	0.5292	-3.4185	-1.2678	0.2519
STABILITY	0.2560	1.5999	0.1607	0.0910	0.8227	0.4421
TENURE	0.1734	2.3025	0.0609	-0.1088	-0.6714	0.5270
DER	0.5004	1.4897	0.1869	-0.1668	-1.8452	0.1146
DEP. VAR	RESABS (F-SCORE)			RESABS (M-SCORE)		
BEST MODEL	FEM			CEM		
N	434			434		

Source: Processed research data (2026)

Based on Table 6, the interaction term between greenwashing and independent commissioners (GREENWASH × INCOM) is positive and significant. This indicates that the presence of independent commissioners strengthens, rather than weakens, the relationship between greenwashing and fraudulent financial statements. Therefore, the moderating effect is significant, but its direction is opposite to the initial hypothesis. This suggests that independent commissioners in Indonesian banking institutions may not function effectively as a governance mechanism to suppress opportunistic reporting behavior associated with greenwashing. Instead, their presence may coexist with symbolic governance practices, where formal board independence does not necessarily translate into stronger monitoring effectiveness. Likewise, the positive and significant coefficient of POLITICS × INCOM indicates that independent commissioners intensify the relationship between political connections and fraudulent financial statement, rather than mitigate it. This finding does not support the predicted weakening role of independent commissioners.

$$\text{F-SCORE} = 0.6828 - 0.0013\text{GREENWASH} - 1.1048\text{POLITICS} - 0.5611\text{INCOM} + 0.0031(\text{GREENWASH}\times\text{INCOM}) + 2.2460(\text{POLITICS}\times\text{INCOM}) + 0.1207\text{STABILITY} + 0.0207\text{TENURE} - 0.0071\text{DER} + \varepsilon \quad (1)$$

Table 6. Main Analysis

Variable	Predict	All Sample				All Sample			
		C	**t-Stat.**	**Prob.**	**Results**	**C**	**t-Stat.**	**Prob.**	**Results**
C		0.6828	4.4629	0.0000		-1.9998	-8.8558	0.0000	
GREENWASH	+	-0.0013	-1.8715	0.0621*	Rejected	-0.0043	-2.9836	0.0030***	Rejected
POLITICS	+	-1.1048	-3.0686	0.0023***	Rejected	-1.1648	-2.4177	0.0160**	Rejected
INCOM		-0.5611	-1.7758	0.0766*		-0.9694	-2.1925	0.0289**	
GREENWASH*INCOM	-	0.0031	1.9792	0.0485**	Rejected	0.0122	3.8140	0.0002***	Rejected
POLITICS*INCOM	-	2.2460	3.0281	0.0026***	Rejected	2.2510	2.2148	0.0273**	Rejected
STABILITY		0.1207	6.3820	0.0000***		0.1942	2.8691	0.0043***	
TENURE		0.0207	1.9153	0.0562*		0.0007	0.0250	0.9801	
DER		-0.0071	-0.4987	0.6183		-0.0452	-4.1579	0.0000***	
DEP. VAR			F-SCORE				M-SCORE		
BEST MODEL			FEM				CEM		
N			434				434		
R-squared			0.6635				0.0650		
Adjusted R-squared			0.5997				0.0474		
F-statistic			10.4022				3.6932		
Prob(F-statistic)			0.0000***				0.0003***		

Source: Processed research data (2026)
Notes: P-Value: *<0.1; **<0.05; ***<0.001

$$\text{M-SCORE} = -1.9998 - 0.0043\text{GREENWASH} - 1.1648\text{POLITICS} - 0.9694\text{INCOM} + 0.0122(\text{GREENWASH}\times\text{INCOM}) + 2.2510(\text{POLITICS}\times\text{INCOM}) + 0.1942\text{STABILITY} + 0.0007\text{TENURE} - 0.0452\text{DER} + \varepsilon \quad (2)$$

Greenwashing and Fraudulent Financial Statement

The findings presented in Table 6 of the study demonstrate that greenwashing has a negative and statistically significant association with fraudulent financial statements. Using the F-Score model, the coefficient of GREENWASH is −0.0013 with a p-value of 0.0621, indicating significance at the 10% level. Similarly, in the M-Score model, the coefficient is −0.0043 with a p-value of 0.0030. The negative coefficient indicates that higher greenwashing disclosure is associated with lower fraudulent financial statement. This direction is inconsistent with the proposed hypothesis that greenwashing negatively influences fraudulent financial statements. Therefore, H_1 is not supported.

The practices of greenwashing have a detrimental impact on the occurrence of fraud, as indicated by both the F-Score and the M-Score. The phenomenon of greenwashing has the potential to create trade-offs with financial fraud by misrepresenting sustainability practices, which can ultimately result in deceptive financial reporting. A range of theoretical frameworks, including stakeholder theory, legitimacy theory, and signaling theory, offer a conceptual foundation for examining this phenomenon. These theories posit that companies may employ greenwashing to maintain stakeholder legitimacy, convey a positive image to stakeholders, or align with perceived expectations, despite the potential misleading nature of their practices (Netto et al., 2020; Tanchangya et al., 2025). Although the term "greenwashing" itself is classified as a form of fraud in the context of sustainability, several mechanisms have been identified that facilitate the potential for greenwashing to also reduce financial statement fraud. The practice of "greenwashing" among commercial banks involves the use of excessive green communication to mitigate stakeholder pressure and gain legitimacy (Free et al., 2024).

In Indonesia, both commercial and private banks face a strategic trade-off between greenwashing (false ESG branding) and fraudulent financial statement. This analysis is further compounded by the stringent regulations promulgated by the Indonesia Financial Services Authority (OJK). The OJK mandates the submission of sustainability reports (Otoritas Jasa Keuangan, 2017), thereby compelling financial institutions to prioritize ESG compliance over fraudulent financial statement. However, data from the World Bank reveals that from 2018 to 2021, commercial banks in Indonesia experienced an increase in nonperforming loans (NPLs) (Figure 3).

Previous studies report that greenwashing negatively impacts both F-Scores and M-scores by distorting financial transparency and reliability. These scores are contingent upon accurate data for the purpose of assessing financial health and detecting fraudulent financial statements. When companies engage in greenwashing, they misrepresent their environmental, social, and governance (ESG) practices, leading to discrepancies in financial reporting and undermining the reliability of these metrics (Metawa et al., 2023; Wu & Zuo, 2025; Ma & Han, 2025; Indiraswari et al., 2025).

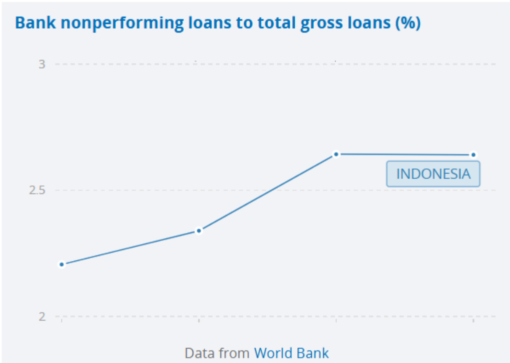

Figure 3. Bank nonperforming loans to total gross loans (%) – Indonesia
Source: World Bank (2021)

This result is inconsistent with previous studies (Pop et al., 2026; Poiriazi et al., 2025; Forliano et al., 2025), which suggest a positive relationship between greenwashing practices and fraudulent financial statements. These studies propose a complementary relationship between greenwashing, earnings management, and financial statement fraud.

Political connections and Fraudulent Financial Statement

The findings indicate that political connections are negatively associated with fraudulent financial statements. In the F-Score model, POLITICS has a coefficient of −1.1048 with a p-value of 0.0023. In the M-Score model, the coefficient is −1.1648 with a p-value of 0.0160. Both coefficients are statistically significant. However, the coefficient direction is negative, whereas the hypothesis predicted a positive relationship between political connections and fraudulent financial statements. This indicates that politically connected firms in the sample tend to exhibit lower fraudulent financial statement than expected. Accordingly, H_2 is not supported.

In addition to the issue of greenwashing associated with financial fraud, the study also reveals the relationship between politics and fraud. The nexus between greenwashing, political connections, and financial fraud is characterized by the exploitation of environmental claims and political influence to mask unethical financial practices. Greenwashing can be used to mislead stakeholders about a company's sustainability efforts, while political connections can serve as a shield from regulatory scrutiny, allowing financial fraud to persist (Poiriazi et al., 2025).

Also, Table 6 reveals that the presence of political connections has been demonstrated to play a pivotal role in the mitigation of financial fraud within Indonesian banking institutions during the observed period of 2016-2022, by leveraging influence and access to resources that can improve governance and oversight. Theoretical frameworks, including Resource Dependency Theory and Agency Theory, offer a foundation for understanding how political relationships can contribute to bank stability and reduce the probability of fraudulent activity (Achmad et al., 2022; Innayah & Pratama, 2022).

The findings of this study indicate that banks with political connections often benefit from regulations and supervision that are more stringent, which serve as a deterrent to financial misconduct. The presence of political connections has the potential to exert a detrimental influence on the F-score by introducing biases and inefficiencies into financial reporting processes. The F-score, a comprehensive metric used to evaluate profitability, leverage, and operational efficiency, is contingent upon the accuracy and transparency of the data upon which it is based. However, the presence of political connections may result in preferential treatment, reduced regulatory scrutiny, or misaligned incentives, thereby distorting financial performance indicators (Bleibtreu et al., 2022; Faccio, 2006; Liu et al., 2023).

Moreover, the M-score is predicated on accurate financial data to identify anomalies in earnings quality. However, the presence of political connections may result in preferential treatment, reduced scrutiny, or misaligned incentives, which can distort financial reporting and increase the risk of fraudulent financial statement. For instance, politically connected firms may exploit their influence to bypass regulatory checks, allowing them to manipulate earnings without detection. Furthermore, the presence of such connections can create an environment where fraudulent activities are overlooked, thereby further undermining the reliability of the M-score (Jiang et al., 2018; Proença et al., 2025). The findings of this study are consistent with the conclusions of prior research (Bleibtreu et al., 2022; Liu et al., 2023; Poiriazi et al., 2025; Proença et al.,

2025) and inconsistent with prior studies while political connections can create incentives and opportunities for fraudulent financial reporting, their impact is not uniformly positive (Akcigit et al., 2023).

Greenwashing, Independent Commissioner, and Fraudulent Financial Statement

Based on Table 6, the interaction between greenwashing and independent commissioners (GREENWASH × INCOM) shows a positive and statistically significant coefficient in both estimation models. In the F-Score model, the coefficient is 0.0031 with a p-value of 0.0485. In the M-Score model, the coefficient is 0.0122 with a p-value of 0.0002. The positive coefficient shows that the interaction between independent directors and greenwashing actually amplifies the likelihood of financial statement fraud. In other words, instead of mitigating the impact of greenwashing, the presence of independent directors intensifies it. Since this interaction effect is significant and aligns with the predicted positive direction, H_3 is not supported.

In essence, the presence of independent commissioners has the potential to mitigate the adverse consequences of greenwashing on financial fraud through the enhancement of oversight mechanisms and the promotion of transparency. Their role as impartial board members ensures that companies adhere to ethical practices and comply with sustainability standards. Theoretical frameworks, including Agency Theory and Stakeholder Theory, elucidate how independent commissioners function as watchdogs, thereby reducing the likelihood of deceptive practices such as greenwashing and financial fraud (Fama & French, 1998; Lin et al., 2025).

But in this study the presence of an independent commissioner can positively impact greenwashing on financial fraud by failing to provide adequate oversight and governance. Theoretical frameworks such as Agency Theory and Legitimacy Theory explain how weak governance structures, including ineffective independent commissioners, allow companies to engage in greenwashing and financial fraud without significant repercussions. These commissioners may lack the authority, expertise, or independence needed to challenge misleading sustainability claims or detect fraudulent financial practices. The ESG report greenwashing has been found to increase stock price crash risk, particularly in companies with high earnings management (Liu et al., 2024). This suggests that weak corporate governance, which could include ineffective independent commissioners, may exacerbate the negative effects of greenwashing on financial outcomes. The study also found that better internal and external corporate governance can suppress the impact of ESG greenwashing. In the context of an emerging economy with high-level information asymmetry, greenwashing was found to positively affect corporate financial performance (Li et al., 2023). This implies that weak governance structures, potentially including ineffective independent commissioners, may fail to prevent or even inadvertently encourage greenwashing practices that lead to short-term financial gains.

Political connections, Independent Commissioner, and Fraudulent Financial Statement

Based on Table 6, the interaction term between political connections and independent commissioners (POLITICS × INCOM) is positive and statistically significant. The F-Score model reports a coefficient of 2.2460 with a p-value of 0.0026, while the M-Score model shows a coefficient of 2.2510 with a p-value of 0.0273. Although the interaction is statistically significant, the coefficient is positive, whereas the hypothesis predicted a negative moderating effect. This suggests that independent commissioners strengthen the relationship between political connections and fraudulent financial statements. Therefore, H_4 is not supported.

On the other hand, thus results reveal that independent commissioners can fail to mitigate the impacts of political connections on financial fraud due to weak governance structures, lack of authority, or insufficient independence. From a Fraud Theory perspective, political ties increase the opportunity for fraud, and if commissioners themselves are influenced by political elites or lack enforcement power, they cannot effectively reduce this opportunity. Agency Theory and Legitimacy Theory explain how ineffective oversight mechanisms allow companies to exploit political connections for unethical practices. When independent commissioners lack the expertise or independence to challenge these connections, financial fraud can thrive (Harymawan et al., 2020; Susanto et al., 2024). Empirical evidence highlights that politically connected firms may use their influence to bypass regulatory scrutiny or manipulate financial reports. This creates an environment where financial fraud becomes more prevalent, as the oversight mechanisms intended to prevent such behavior are compromised (Kassem, 2022; Md Nasir et al., 2024).

Additional Analysis

The researcher endeavors to provide a more comprehensive examination of this study, focusing on the period preceding the crisis (2016-2019) and the period during the crisis (2020-2022). The period before and during COVID-19 is particularly insightful for analyzing greenwashing and political connections in financial fraud due to the unique economic and social dynamics that emerged during this time. During crisis periods, firms face greater financial pressure, heightened uncertainty, and stronger legitimacy demands from stakeholders. Under these conditions, incentives to engage in greenwashing or fraudulent financial statement may increase. The pandemic (crisis period) heightened awareness of environmental, social, and governance (ESG) issues, as companies faced pressure to demonstrate their commitment to sustainability. This created opportunities for greenwashing, where firms exaggerated their ESG efforts to attract investors and maintain public trust (Poiriazi et al., 2025). In economic stability perspective, during the pandemic, stakeholders demanded greater transparency and accountability from companies. Firms engaging in greenwashing or exploiting political connections faced increased risks of reputational damage and legal consequences. Moreover, the researchers endeavored to utilize the F-Score to analyze the data since fraud was more clearly illustrated in previous findings (see Table 6). The Adjusted R-Squared F-Score (0.5997) exceeds the M-Score (0.0474).

Table 7 reveals that Greenwashing mitigates fraud in both normal conditions and crisis periods by influencing stakeholder perceptions and promoting transparency. In stable times, companies may use greenwashing to align with stakeholder expectations for sustainability. While greenwashing can be deceptive, it often leads to increased scrutiny of corporate practices, indirectly reducing opportunities for fraud. Stakeholders demand accountability, which forces companies to improve their governance and reporting standards (Yildirim, 2023; Zervoudi et al., 2025). During COVID-19, the heightened focus on environmental, social, and governance issues amplified the role of greenwashing. Companies engaging in greenwashing faced greater scrutiny due to the pandemic's emphasis on corporate responsibility. This scrutiny acted as a deterrent to fraudulent activities, as firms were compelled to provide more transparent disclosures to maintain trust.

Table 7. Comparative Analysis Before and During Crisis Period

Variable	Predict	Before Crisis Period				During Crisis Period			
		C	t-Stat.	Prob.	Results	C	t-Stat.	Prob.	Results
C		-9.4495	-2.7498	0.0066		0.7449	3.4775	0.0006	
GREENWASH	+	-0.0447	-2.3675	0.0190*	Rejected	-0.0021	-3.2878	0.0012***	Rejected
POLITICS	+	-2.7904	-0.7987	0.4255	Rejected	-0.6128	-2.6973	0.0077***	Rejected
INCOM		-2.5190	-0.5782	0.5639		-1.0025	-3.2817	0.0012***	
GREENWASH*INCOM	-	0.0592	1.5941	0.1127	Rejected	0.0052	3.5529	0.0005***	Rejected
POLITICS*INCOM	-	9.4312	1.2852	0.2004	Rejected	1.4777	2.6443	0.0089***	Rejected
STABILITY		0.4472	2.2635	0.0248**		0.0516	3.2105	0.0016***	
TENURE		0.4415	1.8958	0.0596*		0.0488	3.7736	0.0002***	
DER		1.9399	3.3964	0.0008***		-0.0541	-5.7825	0.0000***	
DEP. VAR			F-SCORE				F-SCORE		
BEST MODEL			FEM				CEM		
N			248				186		
R-squared			0.4050				0.2749		
Adjusted R-squared			0.1602				0.2421		
F-statistic			1.6545				8.3868		
Prob(F-statistic)			0.0041***				0.0000***		

Source: Processed research data (2026)
Notes: P-Value: *<0.1; **<0.05; ***<0.001

Political connections and governance do not significantly influence financial fraud under normal conditions due to stable regulatory environments and consistent oversight mechanisms. In such periods, the absence of extraordinary pressures, such as economic crises or heightened stakeholder scrutiny, reduces the likelihood of political connections being exploited for fraudulent activities. Governance structures, when functioning effectively, provide adequate checks and balances, minimizing the impact of political ties on financial misconduct (Rudyanto et al., 2023; Wang et al., 2024).

CONCLUSION

Based on the empirical findings greenwashing significantly negative influences fraudulent financial statements in Indonesian banks. Political connections are associated with fraudulent financial reporting behaviour, although the direction and strength vary depending on governance conditions. However, the moderating role of independent commissioners strengthens the positive relationship between greenwashing and fraud, nor between political connections and fraud. Instead, the results suggest that independent commissioners may in some cases strengthen or fail to mitigate these relationships, indicating limitations in board independence as an effective governance mechanism in the Indonesian banking context.

Greenwashing practices can significantly contribute to the occurrence of fraudulent financial reporting, as misleading sustainability disclosures may be used to conceal broader forms of fraudulent financial statement. At the same time, political connections create expectations of compliance and ethical conduct. To maintain legitimacy, companies avoid fraudulent practices that could be seen as exploiting their privileged access. Firms with political ties are under greater public and media scrutiny. Any fraud scandal could damage both the company's image and the credibility of the political actors involved, so these firms tend to be more cautious. Independent commissioners are generally expected to strengthen oversight, enhance transparency, and reduce the adverse effects of greenwashing and political influence on financial reporting quality. However, the findings of this study suggest that their monitoring function is not always effective. In certain cases, independent commissioners may be unable to adequately oversee management behavior, thereby allowing greenwashing practices to intensify financial fraud. Similarly, they may fail to sufficiently constrain the influence of political connections when governance effectiveness is weakened by institutional or structural limitations.

This study advances literature by expanding the Fraud Theory to incorporate greenwashing and political connections as emerging drivers of fraudulent financial statements within banking institutions. It also examines the role of independent commissioners as a governance mechanism that influences the strength of these relationships. The study's practical implications highlight that greenwashing, and political connections serve as contemporary fraud drivers, while independent commissioners often provide merely symbolic oversight in Indonesia's banking sector. The Indonesian Financial Authority is advised to enforce stricter scrutiny of banks where board members concurrently hold political positions, as such connections may result in audit waivers and diminished regulatory oversight, thereby increasing the potential for fraud. Auditors and regulators should consider excessive green communication, lacking clear evidence or certification, as a potential indicator of financial statement manipulation and compromised board independence. The regulatory focus should shift from the proportion of independent members to their actual authority and expertise.

Despite its contributions, this study has limitations. First, the measurement of greenwashing relies on content analysis of public reports, which is susceptible to measurement error as it may not fully capture the subtlety of deceptive claims. Second, the study faces potential endogeneity issues, where omitted variables or reverse causality between governance structures and fraud incentives might influence the results. Third, the analysis does not account for the specific expertise or tenure of independent commissioners, which limits the depth of the governance evaluation. Future research could explore several promising avenues. First, studies could utilize longitudinal data to address endogeneity and explore the role of audit committees or external sustainability auditors in mitigating fraud linked to greenwashing. Additionally, future work could disaggregate the characteristics of independent commissioners such as tenure, expertise, and board activity to better understand which attributes contribute to effective oversight. Researchers may also expand the scope beyond the banking industry to compare results across sectors with varying degrees of regulatory scrutiny and environmental disclosure requirements. Moreover, qualitative studies involving interviews with board members, auditors, or regulators could offer deeper insights into how greenwashing practices and political ties are monitored in practice. Finally, future studies could investigate the moderating role of other governance mechanisms, such as audit committees, external audits, or whistleblowing systems in preventing financial fraud linked to greenwashing and political affiliations.

CREDIT AUTHORSHIP CONTRIBUTION STATEMENT

Riyan Harbi Valdiansyah: Conceptualization, Methodology, Software, Writing – original draft, Project administration. **Dian Widiyati**: Software, Writing – review & editing, Data Analysis, Validation.

DECLARATION OF COMPETING INTERESTS

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

DATA AVAILABILITY

Data will be made available on request.

AI USAGE STATEMENT

During the preparation of this work, the author(s) used Grammarly in order to improve the language accuracy and grammar. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

REFERENCES

ACFE. (2019). *Survei Fraud Indonesia 2019.* Indonesia Chapter, *53*(9), 1–76. https://acfe-indonesia.or.id/survei-fraud-indonesia/

Achmad, T., Ghozali, I., & Pamungkas, I. D. (2022). Hexagon fraud: detection of fraudulent financial reporting in state-owned enterprises indonesia. *Economies, 10*(1), 13. https://doi.org/10.3390/economies10010013

Akcigit, U., Baslandze, S., & Lotti, F. (2023). Connecting to power: political connections, innovation, and firm dynamics. *Econometrica*, *91*(2), 529–564. https://doi.org/10.3982/ECTA18338

Bamhdi, A. M. (2024). Analysis of intangible assets reporting standards and automation in ksa within an islamic context – a case study. *Journal of Islamic Accounting and Business Research*. Advance online publication. https://doi.org/10.1108/JIABR-08-2023-0273

Bhagat, C. (2024). Greenwashing vs. Genuine efforts: the role of transparent communication in building corporate credibility. *Multidisciplinary Journal of Law for Future Security*, *1*(2), 51–62.

Bleibtreu, C., Königsgruber, R., & Lanzi, T. (2022). Financial reporting and corporate political connections: an analytical model of interactions. *Journal of Accounting and Public Policy*, *41*(3), 106904. https://doi.org/10.1016/j.jaccpubpol.2021.106904

Calandra, D., Lanzalonga, F., & Biancone, P. Pietro. (2024). Exploring ifrs in islamic finance: a bibliometric and coding analysis of emerging topics and perspectives. *International Journal of Islamic and Middle Eastern Finance and Management*, *17*(4), 711–729. https://doi.org/10.1108/IMEFM-11-2023-0444

Chen, Z., & Keefe, M. O. C. (2020). Rookie directors and firm performance: evidence from china1. *Journal of Corporate Finance*, *60*, 101511. https://doi.org/10.1016/j.jcorpfin.2019.101511

Cressey, D. R. (1953). *Other people's money; a study of the social psychology of embezzlement.* Free Press.

De-Almeida Barbosa Franco, J., Franco Junior, A., Battistelle, R. A., & Bezerra, B. S. (2024). Dynamic capabilities: unveiling key resources for environmental sustainability and economic sustainability, and corporate social responsibility towards sustainable development goals. *Resources, 13*(2), 22. https://doi.org/10.3390/resources13020022

Deegan, C. (2002). The legitimising effect of social and environmental disclosures – a theoretical foundation. *Accounting, Auditing & Accountability Journal, 15*(3), 282-311. https://doi.org/10.1108/09513570210435852

Dempere J, Alamash E and Mattos P (2024) Unveiling the truth: greenwashing in sustainable finance. *Frontiers in Sustainability, 5*, 1362051. https://doi.org/10.3389/frsus.2024.1362051

Faccio, M. (2006). Politically connected firms. *American Economic Review*, *96*(1), 369–386. https://doi.org/10.1257/000282806776157704

Fama, E. F., & French, K. R. (1998). Taxes, financing decisions, and firm value. *The Journal of Finance*, *53*(3), 819–843. https://www.jstor.org/stable/117379

Florackis, C., Fu, X., & Wang, J. (2023). Political connections, environmental violations and punishment: evidence from heavily polluting firms. *International Review of Financial Analysis*, *88*, 102698. https://doi.org/10.1016/j.irfa.2023.102698

Forliano, C., Battisti, E., de Bernardi, P., Kliestik, T. (2025). Mapping the greenwashing research landscape: a theoretical and field analysis. *Review of Managerial Science*, *19*(11), 3407-3456. https://doi.org/10.1007/s11846-025-00856-3

Free, C., Jones, S., & Tremblay, M. S. (2024). Greenwashing and sustainability assurance: a review and call for future research. *Journal of Accounting Literature, 47*(4), 739-764. https://doi.org/10.1108/jal-11-2023-0201

Freeman, R. E. (1984). Strategic management: A stakeholder approach. *Pitman*. https://doi.org/10.1017/CBO9781139192675

Gabrielli, G., Magri, C., Medioli, A., & Marchini, P. L. (2024). The power of big data affordances to reshape anti-fraud strategies. *Technological Forecasting and Social Change*, *205*, 123507. https://doi.org/10.1016/j.techfore.2024.123507

Gilbert, J. (2024). Scripting mortgage fraud for the motion picture: "Fraud and its interrelationship with the financial services sector in the UK." *Journal of Economic Criminology*, *5*, 100084. https://doi.org/10.1016/j.jeconc.2024.100084

Hardiningsih, P., Srimindarti, C., Anggana Lisiantara, G., & Kartika, A. (2024). How does environmental, social, governance disclosure and political connection performance affect firm value? An empirical study in singapore. *Cogent Business and Management*, *11*(1). https://doi.org/10.1080/23311975.2024.2377764

Harymawan, I., Putra, F. K. G., Ekasari, W. F., & Sucahyati, D. (2020). Are independent commissioners able to mitigate higher audit fees in politically connected firms? Evidence from Indonesia. *International Journal of Innovation, Creativity and Change, 11*(8), 24–43. https://www.ijicc.net/images/vol11iss8/11804_Harymawan_2020_E_R.pdf

Hung, D., Hoang, T. V. H., & Dang, T. B. (2017). Application of F-Score in Predicting Fraud, Errors: Experimental Research in Vietnam. *International International Journal of Accounting and Financial Reporting*, *7*(2), 303. https://doi.org/10.5296/ijafr.v7i2.12174

Howard, C. (2011). Putting the freud in fraud: Why the fraud triangle is no longer enough. *IN Howart, Crowe*

Indiraswari, D. S., Subroto, B., Rosidi, R., & Subekti, I. (2025). Corporate governance and financial statement fraud: Evidence on the moderating influence of financial distress. Problems and *Perspectives in Management, 23*(2), 785–795. https://doi.org/10.21511/ppm.23(2).2025.57

Indriaty, L., & Thomas, G. N. (2023). Analysis of Hexagon Fraud Model, the S.C.C.O.R.E Model Influencing Fraudulent Financial Reporting on State-Owned Companies of Indonesia. *ECONOMICS*, *11*(s1), 73–92. https://doi.org/10.2478/eoik-2023-0060

Innayah, M., & Pratama, B. (2022). Political connection and board characteristic's effect on financial performance: evidence from indonesian banking firm. In *Proceedings of the 3rd International Conference of Business, Accounting, and Economics, ICBAE 2022, 10-11 August 2022, Purwokerto, Central Java, Indonesia, Vol.()*, 230. https://doi.org/10.4108/eai.10-8-2022.2320876

Jensen, M.C., & Meckling, W.H. (1976) Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X

Jiang, H., Hu, Y., Zhang, H., & Zhou, D. (2018). Benefits of downward earnings management and political connection: evidence from government subsidy and market pricing. *The International Journal of Accounting*, *53*(4), 255–273. https://doi.org/10.1016/j.intacc.2018.11.001

Kassem, R. (2022). Elucidating corporate governance's impact and role in countering fraud. *Corporate Governance: The International Journal of Business in Society*, *22*(7), 1523–1546. https://doi.org/10.1108/CG-08-2021-0279

Kumar, D., & Ratten, V. (2024). Artificial intelligence and family businesses: a systematic literature review. *Journal of Family Business Management*. *Advance online publication*. https://doi.org/10.1108/JFBM-08-2024-0160

Labuschagne, M., & Fourie, H. (2025). Fraud investigation skills for internal auditors. *International Journal of Accounting, Auditing and Performance Evaluation*, *21*(1–2), 301–318. https://doi.org/10.1504/IJAAPE.2025.144914

Li, W., Li, W., Seppänen, V., & Koivumäki, T. (2023). Effects of greenwashing on financial performance: moderation through local environmental regulation and media coverage. *Business Strategy and the Environment*, *32*(1), 820–841. https://doi.org/10.1002/bse.3177

Lin, W. L., Chong, S. C., Pek, C. K., Yong, J. Y., Ming, K. L. Y., & XeChung, N. L. (2025). The impact of greenwashing: risks and implications for corporate performance and stakeholder trust. In *Proceedings of the International Conference on Environmental, Social, and Governance (ICESG 2024) (pp. 77-94).* Springer Nature.

Liu, G., Qian, H., Shi, Y., Zhang, Y., & Wu, F. (2024). Does ESG report greenwashing increase stock price crash risk? *China Journal of Accounting Studies*, *12*(3), 615-639. https://doi.org/10.1080/21697213.2024.2303070

Liu, H., Wang, Q., & Li, J. (2024). Political connections and greenwashing: chinese evidence. *Applied Economics*, *57*(37), 5661-5679. https://doi.org/10.1080/00036846.2024.2365455

Liu, Y., Li, W., Wang, L., & Meng, Q. (2023). Why greenwashing occurs and what happens afterwards? A systematic literature review and future research agenda. *Environmental Science and Pollution Research*, *30*(56), 118102–118116. https://doi.org/10.1007/s11356-023-30571-z

Ma, Y., & Han, W.Z. (2025). How false-disclosure greenwashing affects corporate financial sustainability. Discover *Sustainability, 7*(1), 136. https://doi.org/10.1007/s43621-025-02465-2

Marrucci, L., Iovino, R., & Iraldo, F. (2025). Environmental sustainability award winners: do they communicate their environmental performance without potential greenwashing? *Corporate Social Responsibility and Environmental Management*, *32*(2), 2783-2794. https://doi.org/10.1002/csr.3088

Martí-Ballester, C.-P. (2023). Mutual funds and gender equality in portfolio firms: toward the sustainable development goals. *Corporate Social Responsibility and Environmental Management*, *30*(2), 905–926. https://doi.org/10.1002/csr.2396

Md Nasir, N. A., Che Nawi, N., Zainuddin, S. A., Musa, Z. K. C., & Jamil, A. (2024). The alarming shift from earnings management to fraudulent financial reporting. *Board Diversity and Corporate Governance* (pp. 455–465). Springer. https://doi.org/10.1007/978-3-031-53877-3_35

Metawa, N., Boujlil, R., & Alsunbul, S. (2023). Fraud-Free Green Finance: Using Deep Learning to Preserve the Integrity of Financial Statements for Enhanced Capital Market Sustainability. *International Journal of Energy Economics and Policy, 13*(6), 610–617. https://doi.org/10.32479/ijeep.15197

Mishra, T., Park, D., Parhi, M., Uddin, G. S. & Tian, S. (2023). A memory in the bond: green bond and sectoral investment interdependence in a fractionally cointegrated VAR framework. *Energy Economics*, *121*, 106652. https://doi.org/10.1016/j.eneco.2023.106652

Netto, S., Sobral, M., Ribeiro, A & Soares, G. (2020). Concepts and forms of greenwashing: a systematic review. *Environmental Sciences Europe, 32*(1), 19. https://doi.org/10.1186/s12302-020-0300-3

Odufisan, O. I., Abhulimen, O. V., & Ogunti, E. O. (2025). Harnessing artificial intelligence and machine learning for fraud detection and prevention in nigeria. *Journal of Economic Criminology*, *7*, 100127. https://doi.org/10.1016/j.jeconc.2025.100127

Otoritas Jasa Keuangan. (2017). *Penerapan Keuangan Berkelanjutan bagi Lembaga Jasa Keuangan, Emiten, dan Perusahaan Publik*. Peraturan Otoritas Jasa Keuangan Nomor 51/POJK.03/2017

Ozcelik, H. (2020). Chapter 9: An Analysis of Fraudulent Financial Reporting Using the Fraud Diamond Theory Perspective: An Empirical Study on the Manufacturing Sector Companies Listed on the Borsa Istanbul. *Contemporary Issues in Audit Management and Forensic Accounting*. https://doi.org/10.1108/S1569-375920200000102012

Patterson, E. R., Smith, J. R., & Tiras, S. L. (2019). The effects of auditor tenure on fraud and its detection. *The* Accounting *Review*, *94*(5), 297–318. https://doi.org/10.2308/accr-52370

Poiriazi, E., Zournatzidou, G., Konteos, G., & Sariannidis, N. (2025). Analyzing the interconnection between environmental, social, and governance (ESG) criteria and corporate corruption: revealing the significant impact of greenwashing. *Administrative Sciences*, *15*(3), 100. https://doi.org/10.3390/admsci15030100

Pop, R., Achim, M.V., Bota-Avram, C. (2026). The shifting landscape of greenwashing – insights from a bibliometric analysis. *Sustainable Finance Review*, *1*(1), 7-25. https://doi.org/10.1108/SFR-05-2025-0005

Proença, C., Augusto, M., & Murteira, J. (2025). The effect of political connections on earnings management: evidence from ecb-supervised banks. *Research in International Business and Finance*, *74*, 102711. https://doi.org/10.1016/j.ribaf.2024.102711

Raboshuk, A., Zakharov, D., Lehenchuk, S., Morgulets, O., & Hryhorevska, O. (2023). The relationship between corporate governance mechanisms and financial performance: The case of listed industrial companies in Oman. *Investment Management and Financial Innovations*, *20*(2)*,* 244-255. https://doi.org/10.21511/imfi.20(2).2023.21

Rudyanto, A., Julisar, J., & Debora, D. (2023). Political connection as a double-edged sword: the case of tax aggressiveness practice during the covid-19 pandemic. *Asian Journal of Accounting Research*, *8*(4), 400–410. https://doi.org/10.1108/AJAR-04-2023-0113

Santos, C., Coelho, A., & Marques, A. (2024). The greenwashing effects on corporate reputation and brand hate, through environmental performance and green perceived risk. *Asia-Pacific Journal of Business Administration, 16*(3), 655–676. https://doi.org/10.1108/APJBA-05-2022-0216

Sari, W. O. N., & Setiawan, D. (2024). Characteristics of the board of commissioners, directors, and financial distress. *Accounting Analysis Journal*, *13*(1), 56–64. https://doi.org/10.15294/aaj.v13i1.1896

Schneider-Maunoury, G. (2023). Is Greenwashing a Definition or only a Hinderance of Sustainable Finance?. *Available at SSRN 4507184.* http://dx.doi.org/10.2139/ssrn.4507184

Susanto, A., Novita, N., & Fambudi, I. N. (2024). The role of independent board of commissioners: a study ownership on ESG disclosure. *Akurasi: Jurnal Studi Akuntansi dan Keuangan*, *7*(2), 443–462. https://doi.org/10.29303/akurasi.v7i2.611

Sylwestrzak, M., & Słomkowska, J. (2025). Evaluating the efficacy of modified Beneish and Dechow models for detecting earnings management in Polish companies. *Central European Management Journal.* Advance online publication. https://doi.org/10.1108/CEMJ-07-2024-0225

Tanchangya, T., Rahman, J., Siddiqi, K., Islam, N., Sarker, T., Naher, K., Das, S., & Chowdhury, S. (2025). Factors affecting green banking technology adoption in Bangladesh. *Discover Sustainability*, *6*(1), 1252. https://doi.org/10.1007/s43621-025-02143-3

Tolossa, A. T., Singh, M., & Gautam, R. K. (2024). Unveiling the nexus: the crucial role of competitive advantage in bridging entrepreneurial marketing practices and sustainable firm performance in small and medium enterprises. *Journal of Innovation and Entrepreneurship*, *13*(1), 43. https://doi.org/10.1186/s13731-024-00398-0

Van Aert, R. C. M., & Goos, C. (2023). A critical reflection on computing the sampling variance of the partial correlation coefficient. *Research Synthesis Methods*, *14*(3), 520–525. https://doi.org/10.1002/jrsm.1632

Vousinas, G. L. (2019). Advancing theory of fraud: the score model. *Journal of Financial Crime*, *26*(1), 372–381. https://doi.org/10.1108/JFC-12-2017-0128

Wang, Y., Ashton, J. K., & Liu, J. (2024). Does the form of state ownership and political connections influence the incidence of financial statement fraud? *The European Journal of Finance*, *30*(18), 2111–2136. https://doi.org/10.1080/1351847X.2024.2363421

Wolfe, D. T., & Hermanson, D. R. (2004). *The fraud diamond: considering the four elements of fraud*. *The CPA* Journal*, 74*(12), 38-42. https://digitalcommons.kennesaw.edu/cgi/viewcontent.cgi?article=2546&context=facpubs

Wooldridge, J. M. (2020). *Introductory econometrics: A modern approach* (7th ed.). Cengage Learning.

Wu, D., & Zuo, X. (2025). Curbing financial greenwashing: Policy tools, legal mechanisms, and corporate responsibility for sustainable development. *International Review of Economics & Finance*, *103*, 104480. https://doi.org/10.1016/j.iref.2025.104480

Xu, J., & Li, R. (2026). How digital transformation curb greenwashing: insights from fraud risk factor theory. *Plos One, 21*(2), e0339282. https://doi.org/10.1371/journal.pone.0339282

Yildirim, S. (2023). Greenwashing: a rapid escape from sustainability or a slow transition? *LBS Journal of* Management *& Research*, *21*(1), 53–63. https://doi.org/10.1108/LBSJMR-11-2022-0077

Yıldız, O. (2026). Greenwashing: Unmasking the hype and finding the truth. *Sage Open*, *16*(1). https://doi.org/10.1177/21582440261430382

Yusof, M., Khair A.H., A., & Simon, J. (2015). Fraudulent financial reporting: an application of fraud models to malaysian public listed companies. *The Macrotheme Review: A Multidisciplinary Journal of Global Macro Trends*, *3*(4), 126–145. https://hull-repository.worktribe.com/output/4218892

Zervoudi, E. K., Moschos, N., & Christopoulos, A. G. (2025). From the corporate social responsibility (CSR) and the environmental, social and governance (ESG) criteria to the greenwashing phenomenon: A comprehensive literature review about the causes, consequences and solutions of the phenomenon with specific case. *Sustainability*, *17*(5), 2222. https://doi.org/10.3390/su17052222

Zhang, K., Pan, Z., Janardhanan, M., & Patel, I. (2022). Relationship analysis between greenwashing and environmental performance. *Environment, Development and Sustainability*, *25*(8), 7927–7957. https://doi.org/10.1007/s10668-022-02381-9

Zulfikar, R., Lukviarman, N., Suhardjanto, D., Ismail, T., Dwi Astuti, K., & Meutia, M. (2020). Corporate governance compliance in banking industry: the role of the board. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 137. https://doi.org/10.3390/joitmc6040137